FIG. 1

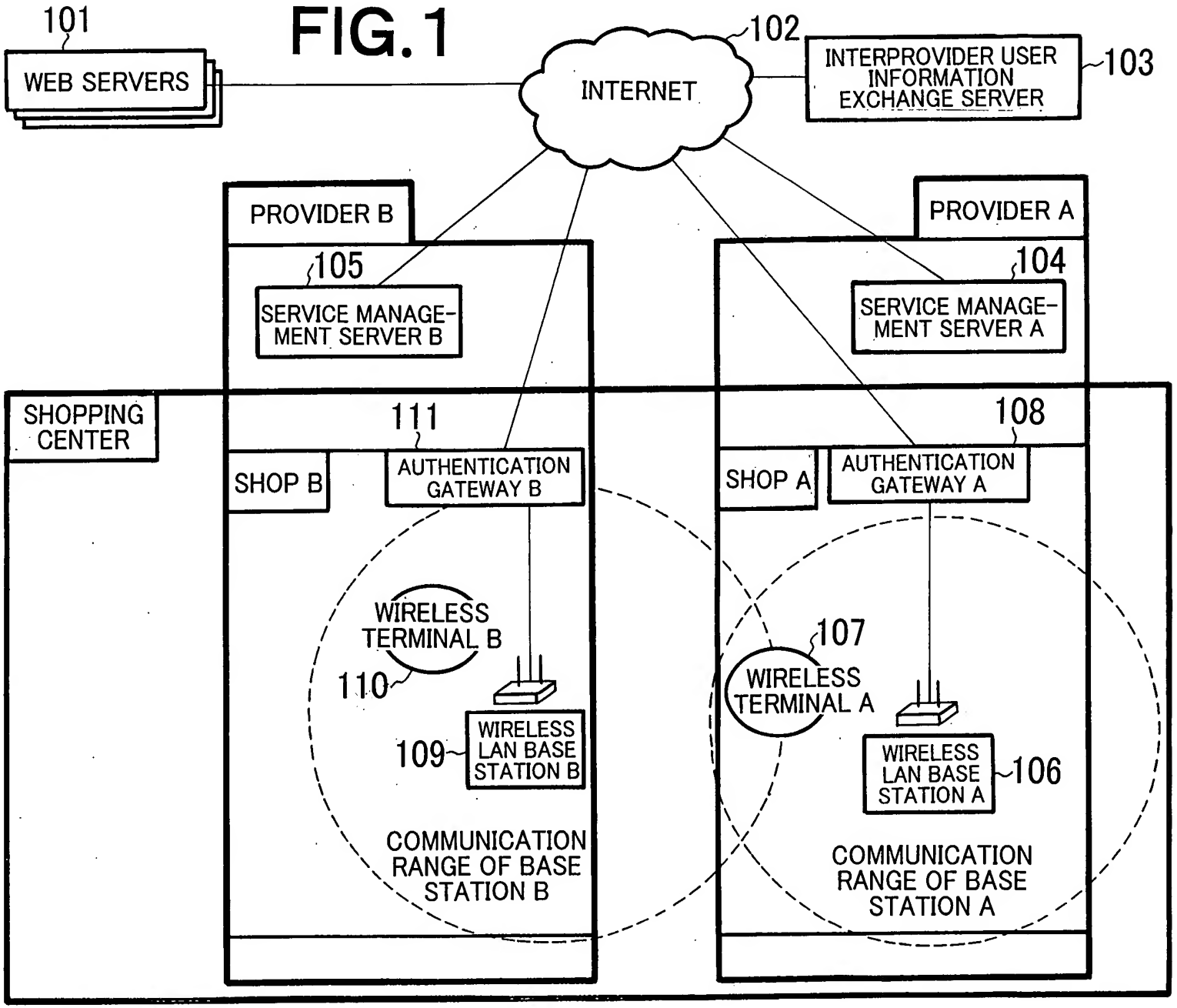

101
WEB SERVERS
INTERNET
102
INTERPROVIDER USER INFORMATION EXCHANGE SERVER
103
PROVIDER B
PROVIDER A
105
SERVICE MANAGE-MENT SERVER B
104
SERVICE MANAGE-MENT SERVER A
SHOPPING CENTER
111
108
SHOP B
AUTHENTICATION GATEWAY B
SHOP A
AUTHENTICATION GATEWAY A
WIRELESS TERMINAL B
110
107
WIRELESS TERMINAL A
109
WIRELESS LAN BASE STATION B
WIRELESS LAN BASE STATION A
106
COMMUNICATION RANGE OF BASE STATION B
COMMUNICATION RANGE OF BASE STATION A

FIG.2

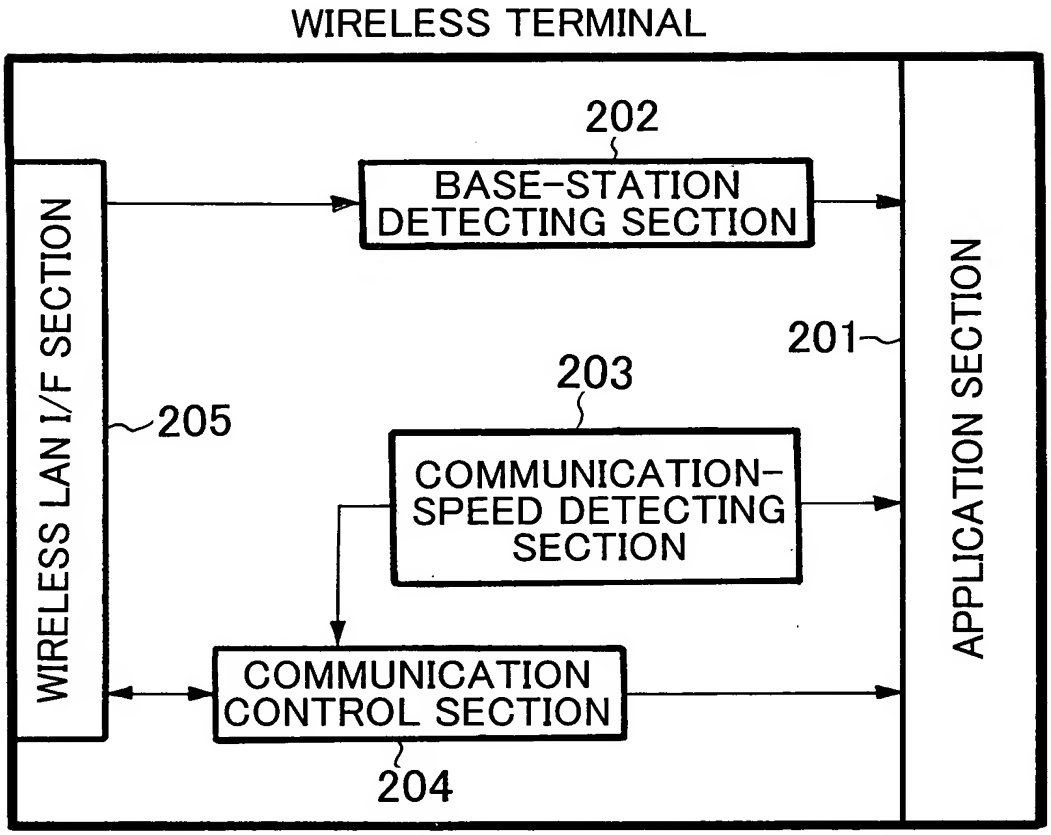

WIRELESS TERMINAL
202
BASE-STATION DETECTING SECTION
201
203
205
COMMUNICATION-SPEED DETECTING SECTION
WIRELESS LAN I/F SECTION
APPLICATION SECTION
COMMUNICATION CONTROL SECTION
204

FIG.3

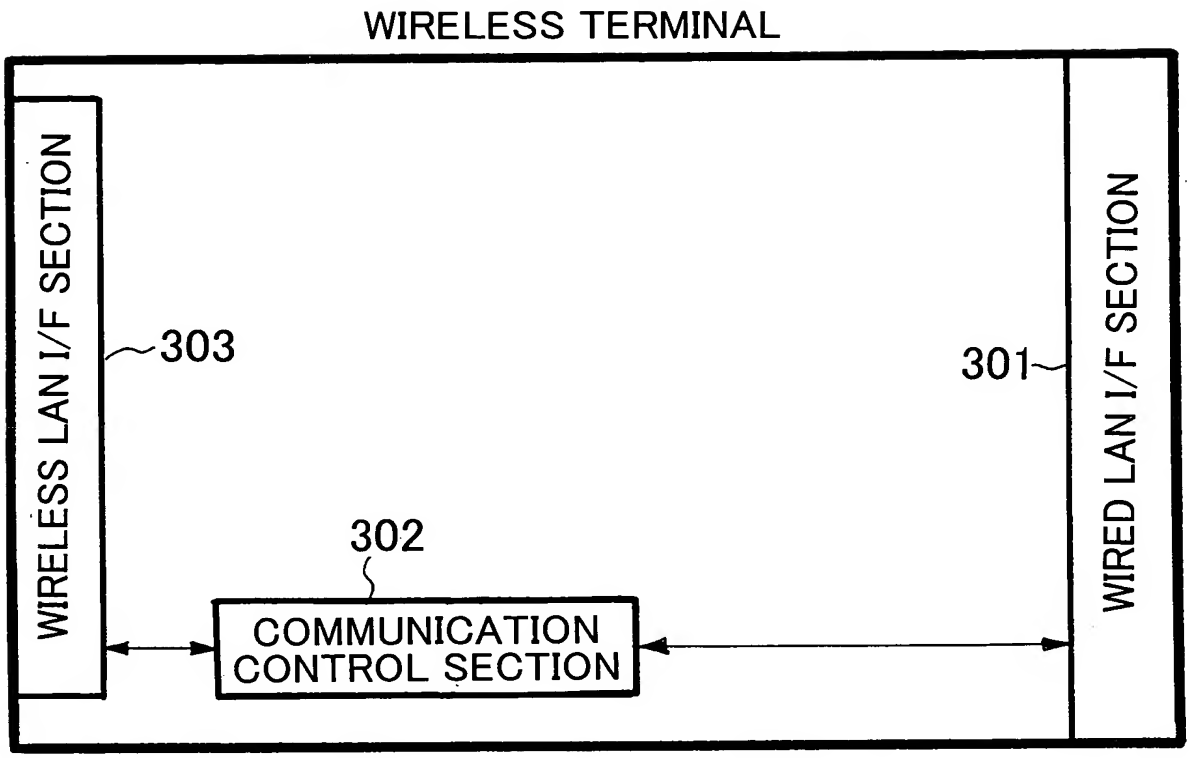

WIRELESS TERMINAL
WIRELESS LAN I/F SECTION
303
301
WIRED LAN I/F SECTION
302
COMMUNICATION CONTROL SECTION

FIG.4

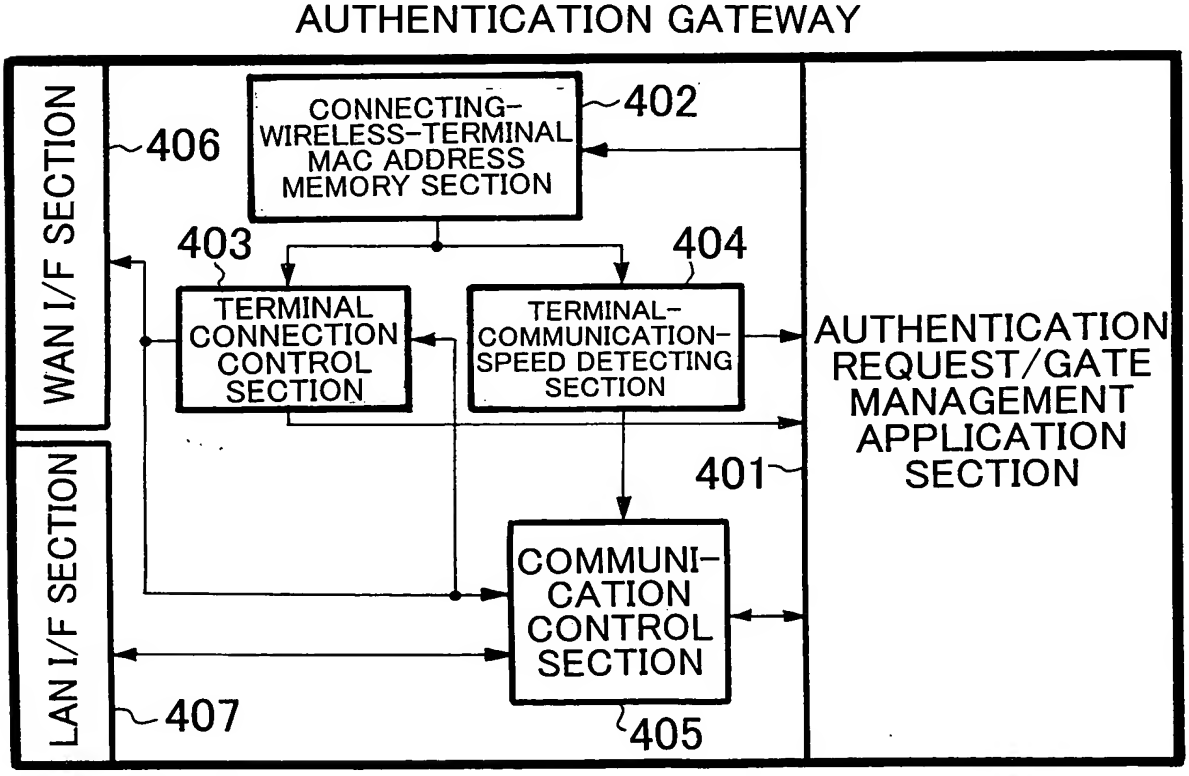

AUTHENTICATION GATEWAY
WAN I/F SECTION
406
CONNECTING-WIRELESS-TERMINAL MAC ADDRESS MEMORY SECTION
402
403
404
TERMINAL CONNECTION CONTROL SECTION
TERMINAL-COMMUNICATION-SPEED DETECTING SECTION
AUTHENTICATION REQUEST/GATE MANAGEMENT APPLICATION SECTION
401
LAN I/F SECTION
COMMUNI-CATION CONTROL SECTION
407
405

FIG.5

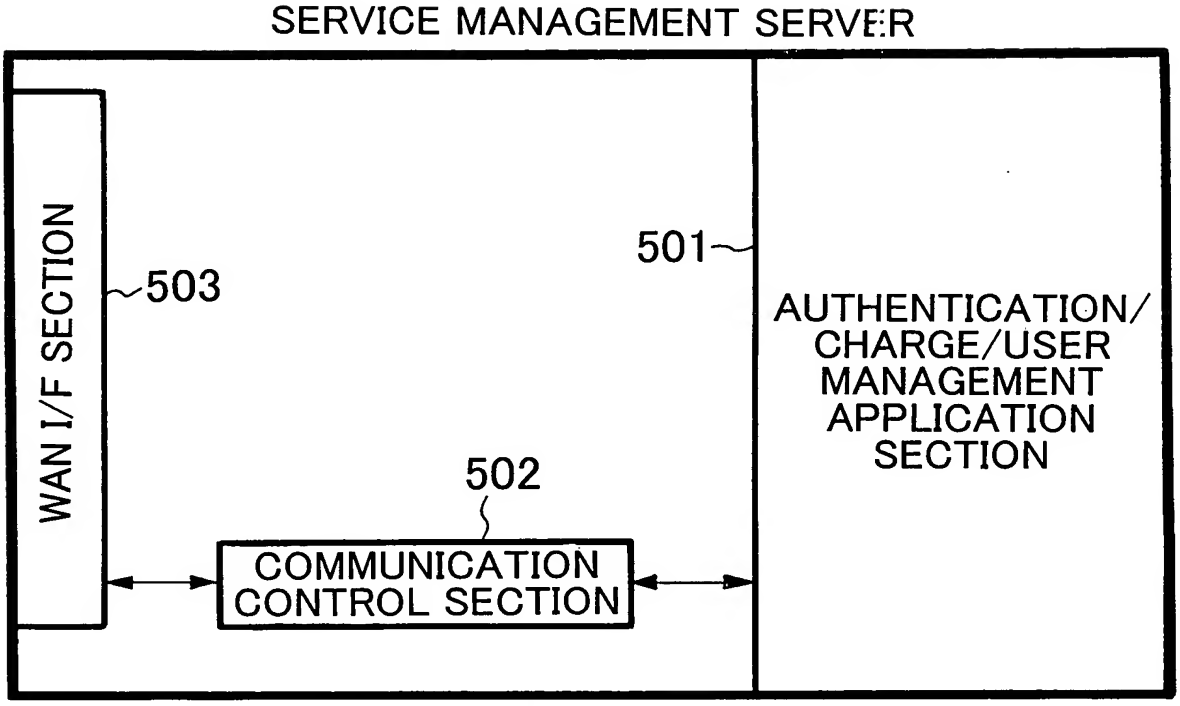

SERVICE MANAGEMENT SERVER
WAN I/F SECTION
503
501
AUTHENTICATION/
CHARGE/USER
MANAGEMENT
APPLICATION
SECTION
502
COMMUNICATION
CONTROL SECTION

FIG.6

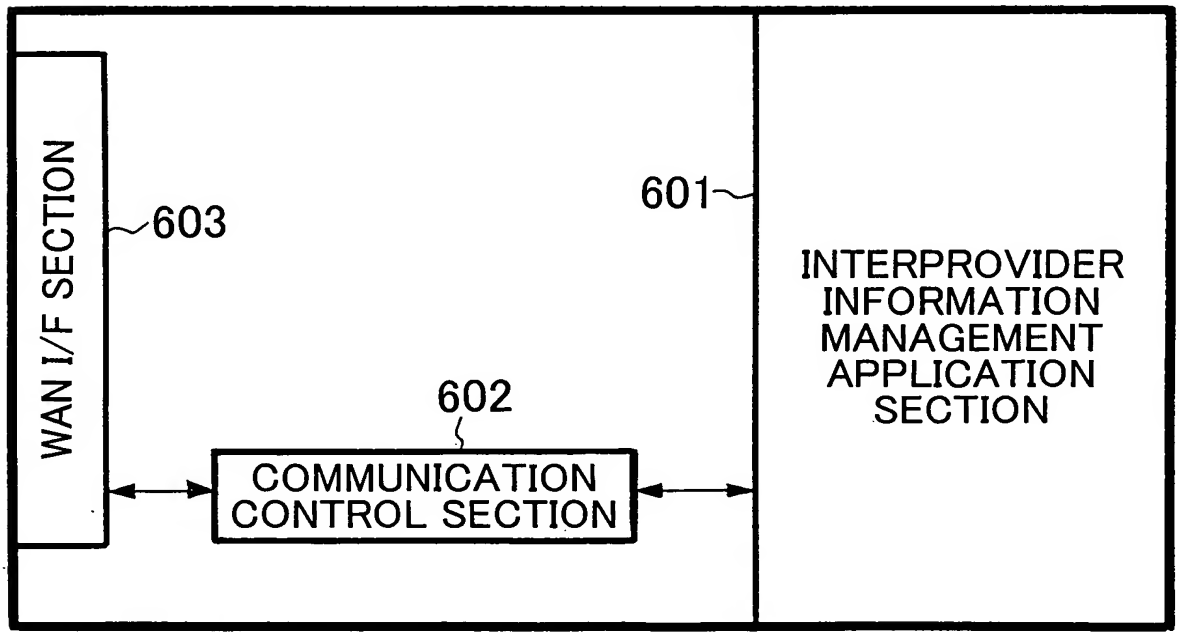

INTERPROVIDER USER INFORMATION
EXCHANGE SERVER
WAN I/F SECTION
603
601
INTERPROVIDER
INFORMATION
MANAGEMENT
APPLICATION
SECTION
602
COMMUNICATION
CONTROL SECTION

FIG.7

TABLE OF SERVICE MANAGEMENT SERVER
(FOR CONTRACTED USERS)

USER ID 701	PASSWORD 702	MAC ADDRESS 703	MONTHLY ROAMING COMMUNICATION AMOUNT 704	MONTHLY ROAMING COMMUNICATION TIME 705	ROAMING CHARGE 706
EXAMPLE: Yamada Suzuki ...	EXAMPLE: XXXXX YYYYY ...	EXAMPLE: 11:22:33:44:55:66 AA:BB:CC:DD:EE:FF ...	EXAMPLE: 20000Kbyte 500Kbyte ...	EXAMPLE: 10:30 2:00 ...	EXAMPLE: ¥2,000 ¥100 ...

TABLE OF SERVICE MANAGEMENT SERVER
(FOR USERS CONTRACTED WITH OTHER PROVIDERS)

INTERPRO-VIDER COMMON ID 707	MAC ADDRESS 708	MONTHLY ROAMING COMMUNICATION AMOUNT 709	MONTHLY ROAMING COMMUNICATION TIME 710	ROAMING CHARGE 711
EXAMPLE: 11223344 11223345 ...	EXAMPLE: 22:33:44:55:66:77 33:44:55:66:77:88 ...	EXAMPLE: 10000Kbyte 300Kbyte ...	EXAMPLE: 9:30 1:30 ...	EXAMPLE: ¥1,500 ¥100 ...

FIG.8

USER INFORMATION

INTERPROVIDER COMMON ID 801	CONTRACTED PROVIDER 802	PROVIDER INHERENT ID 803	PROVIDER INHERENT PASSWORD 804
EXAMPLE: 11223344 11223345 11223346 11223347 ...	EXAMPLE: PROVIDER A PROVIDER A PROVIDER B PROVIDER B ...	EXAMPLE: Tanaka Sato Yamada Suzuki ...	EXAMPLE: TTTTT SSSSS XXXXX YYYYY ...

ROAMING HISTORY

INTERPROVIDER COMMON ID 805	OTHER PROVIDER NAME 806	MONTHLY ROAMING COMMUNICATION AMOUNT 807	MONTHLY ROAMING COMMUNICATION TIME 808	ROAMING CHARGE 809
EXAMPLE: 11223344 ...	EXAMPLE: PROVIDER B PROVIDER C ...	EXAMPLE: 10000Kbyte 600Kbyte ...	EXAMPLE: 9:30 1:30 ...	EXAMPLE: ¥1,500 ¥200 ...
EXAMPLE: 11223345 ...	EXAMPLE: PROVIDER B PROVIDER C ...	EXAMPLE: 300Kbyte 400Kbyte ...	EXAMPLE: 1:00 1:15 ...	EXAMPLE: ¥100 ¥150 ...
- - -	- - -	- - -	- - -	- - -

FIG.9

FLOWCHART FOR WIRELESS TERMINAL

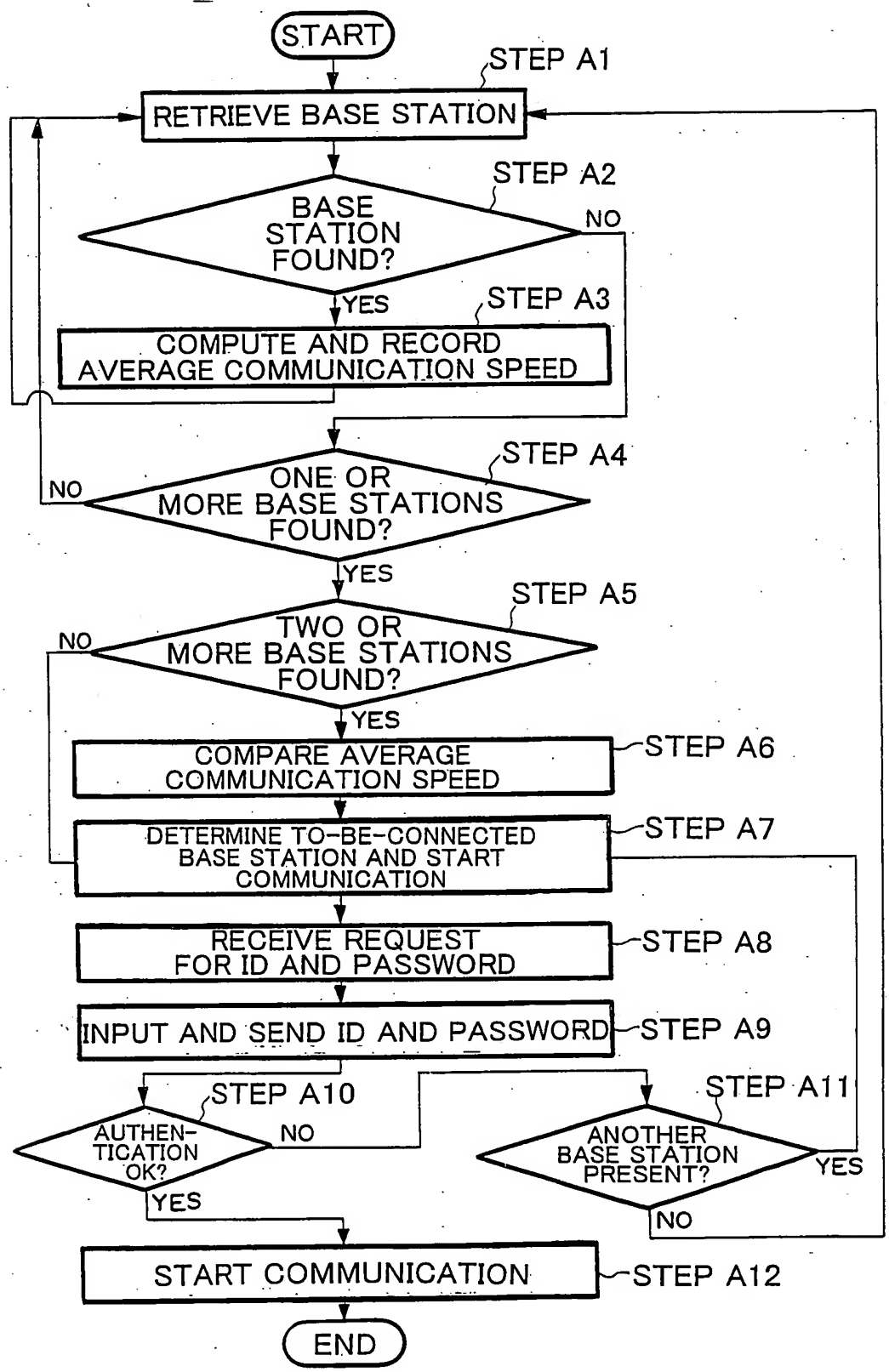


FIG.10

FLOWCHART FOR AUTHENTICATION GATEWAY

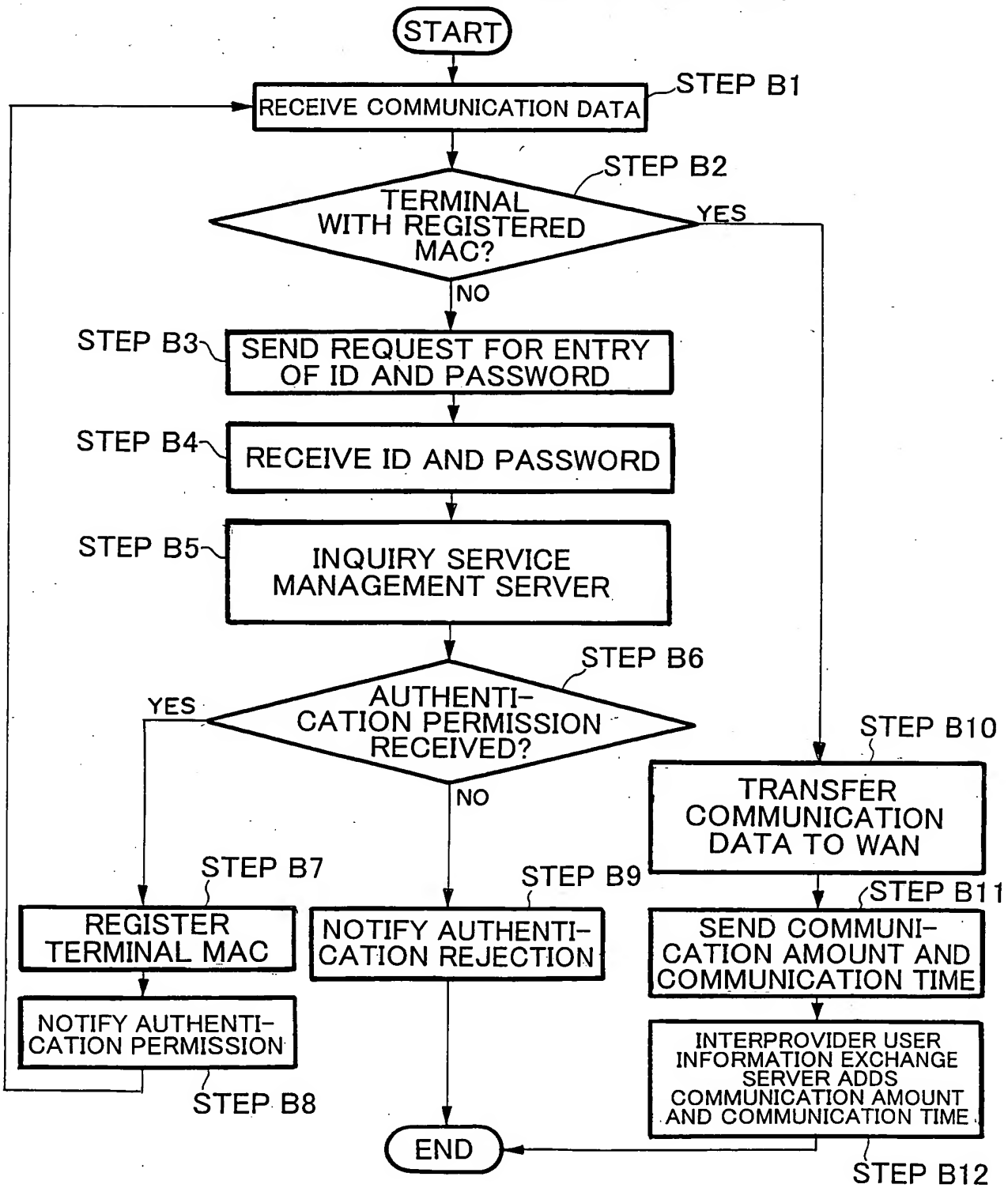


FIG. 11

FLOWCHART FOR SERVICE MANAGEMENT SERVER

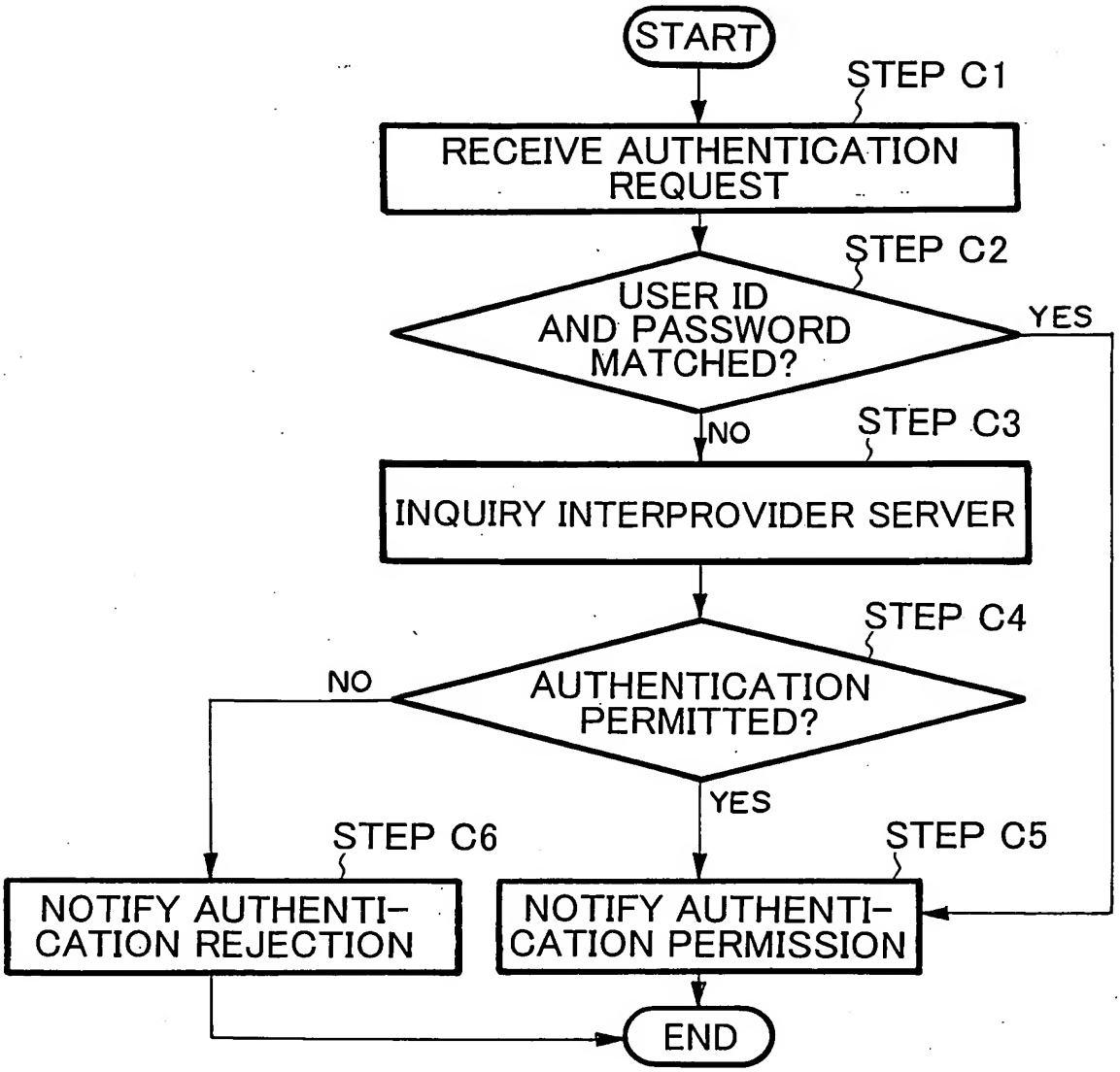


FIG. 12

FLOWCHART OF ROAMING CHARGE SETTLING PROCESS

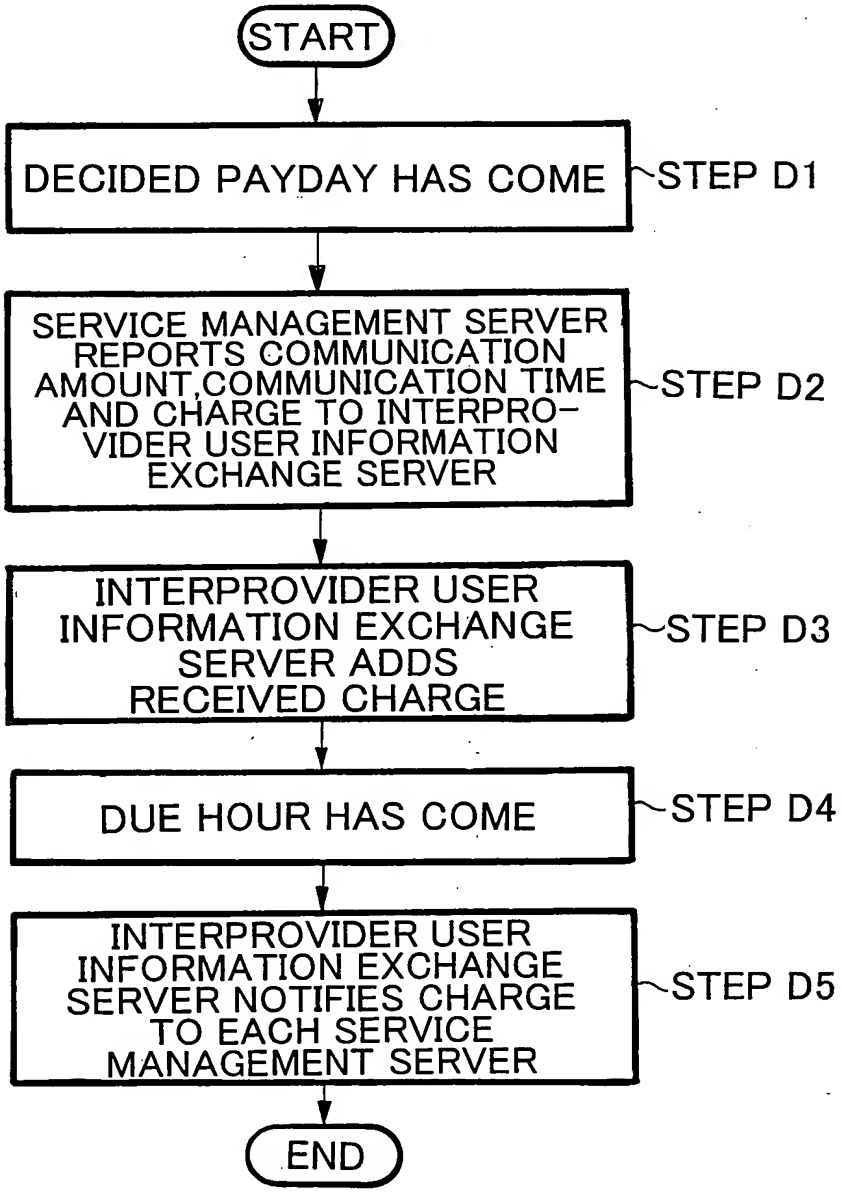


FIG.13

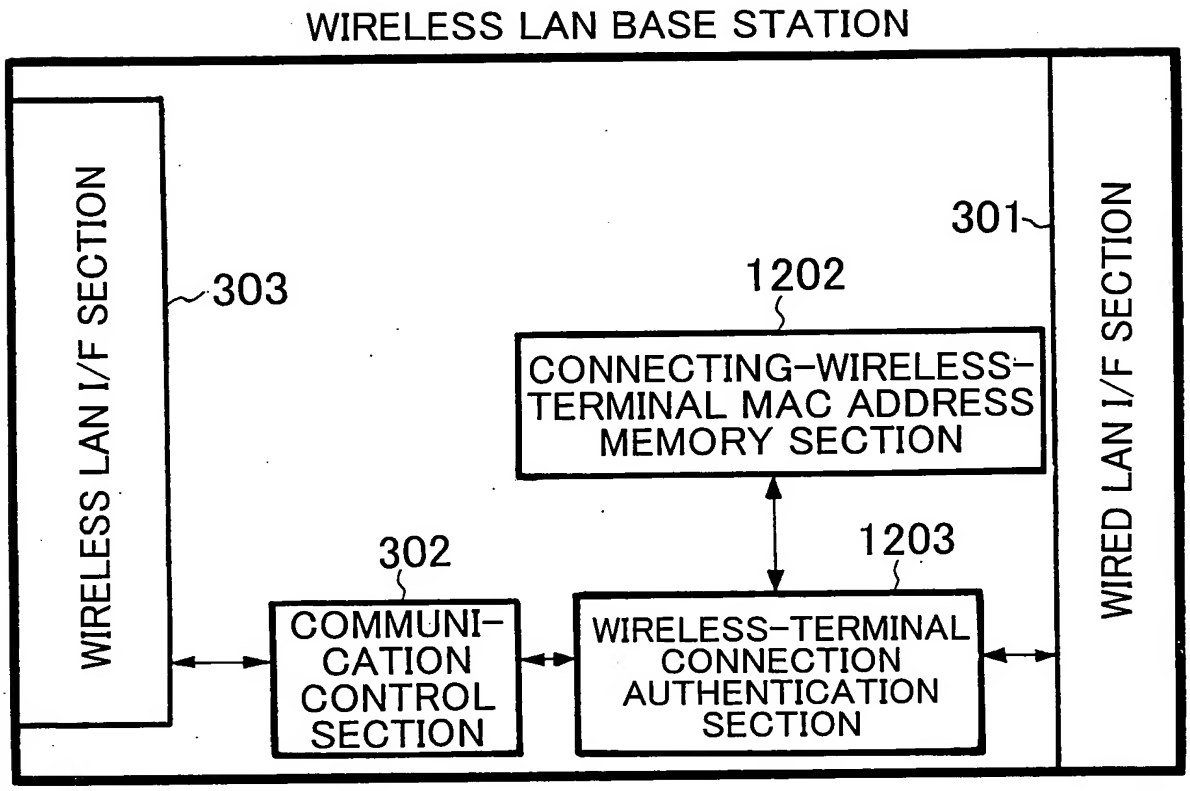

WIRELESS LAN BASE STATION
WIRELESS LAN I/F SECTION
303
301
1202
CONNECTING-WIRELESS-TERMINAL MAC ADDRESS MEMORY SECTION
1203
302
COMMUNI-CATION CONTROL SECTION
WIRELESS-TERMINAL CONNECTION AUTHENTICATION SECTION
WIRED LAN I/F SECTION

FIG. 14

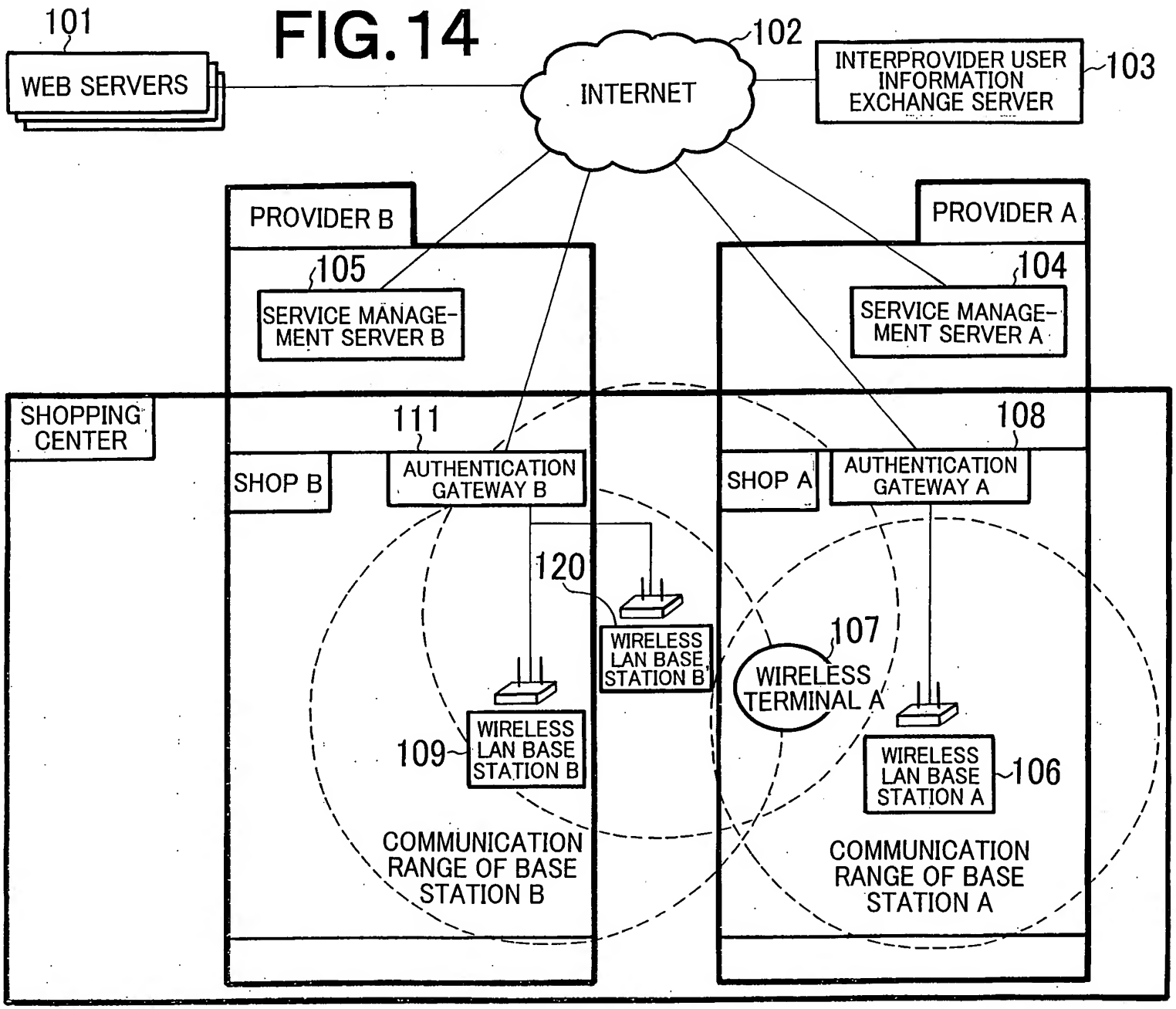

101
WEB SERVERS
INTERNET
102
INTERPROVIDER USER INFORMATION EXCHANGE SERVER
103
PROVIDER B
105
SERVICE MANAGE-MENT SERVER B
PROVIDER A
104
SERVICE MANAGE-MENT SERVER A
SHOPPING CENTER
111
SHOP B
AUTHENTICATION GATEWAY B
108
SHOP A
AUTHENTICATION GATEWAY A
120
WIRELESS LAN BASE STATION B
107
WIRELESS TERMINAL A
109
WIRELESS LAN BASE STATION B
WIRELESS LAN BASE STATION A
106
COMMUNICATION RANGE OF BASE STATION B
COMMUNICATION RANGE OF BASE STATION A

FIG. 15

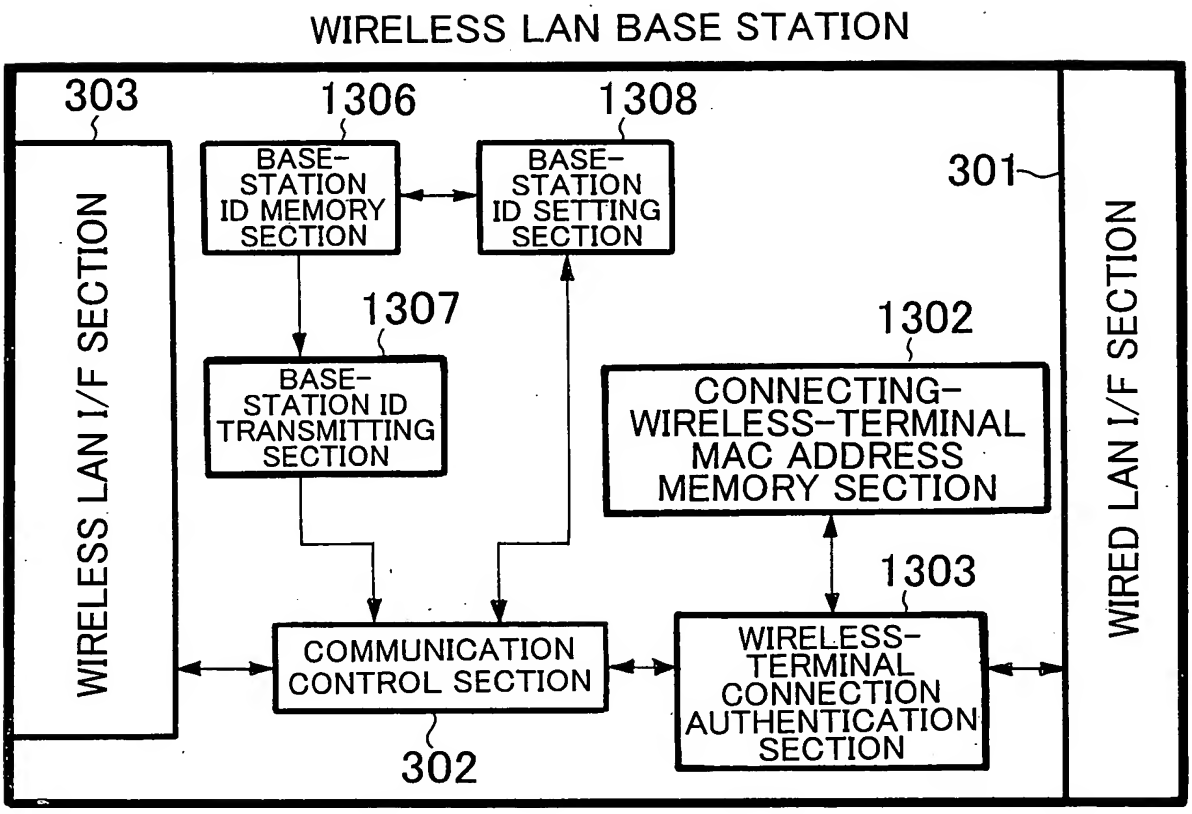
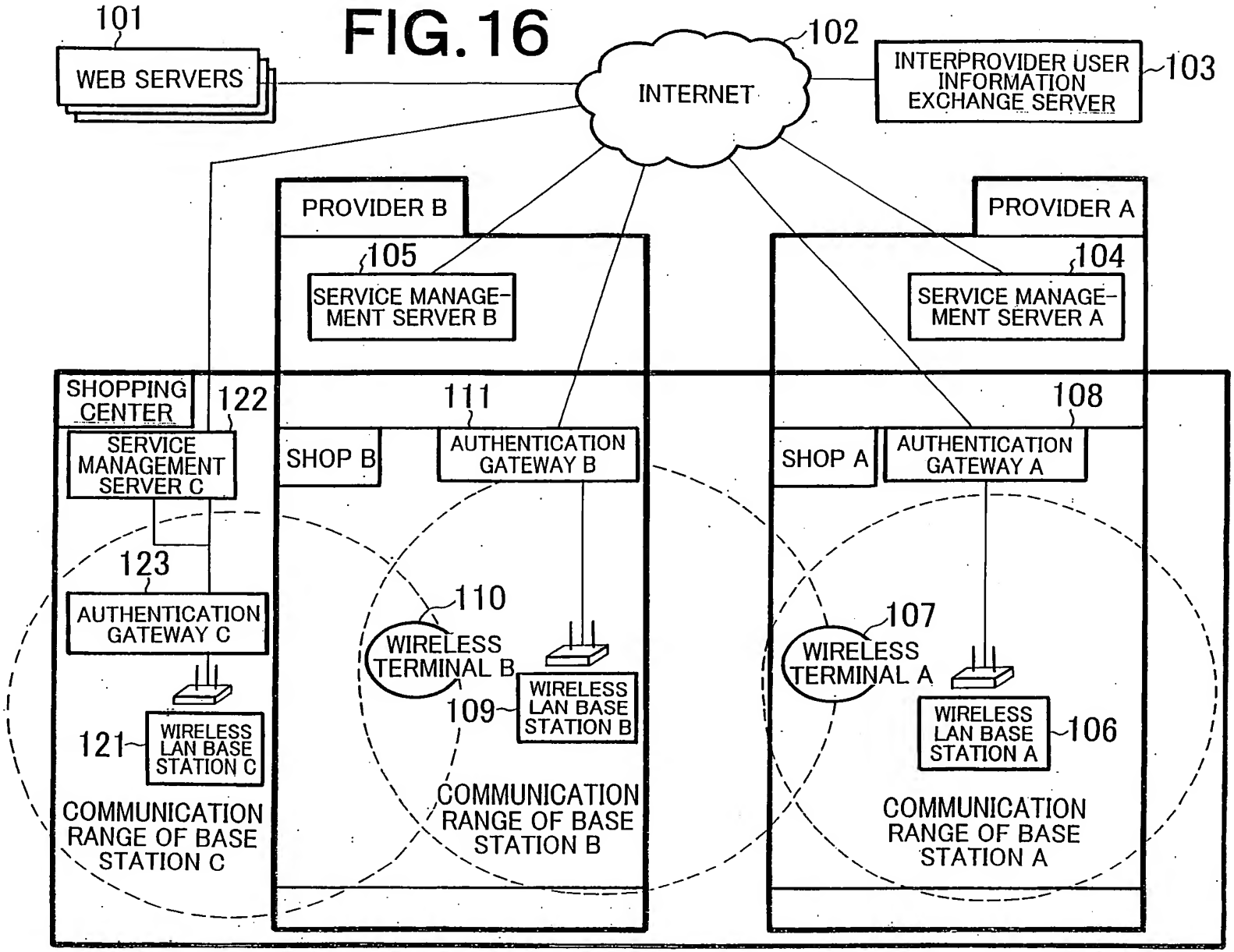

WIRELESS LAN BASE STATION
303
1306
1308
301
BASE-STATION ID MEMORY SECTION
BASE-STATION ID SETTING SECTION
WIRELESS LAN I/F SECTION
1307
1302
BASE-STATION ID TRANSMITTING SECTION
CONNECTING-WIRELESS-TERMINAL MAC ADDRESS MEMORY SECTION
1303
COMMUNICATION CONTROL SECTION
WIRELESS-TERMINAL CONNECTION AUTHENTICATION SECTION
WIRED LAN I/F SECTION
302

FIG. 16


101
WEB SERVERS
INTERNET
102
INTERPROVIDER USER INFORMATION EXCHANGE SERVER
103
PROVIDER B
105
SERVICE MANAGEMENT SERVER B
PROVIDER A
104
SERVICE MANAGEMENT SERVER A
SHOPPING CENTER
122
SERVICE MANAGEMENT SERVER C
111
SHOP B
AUTHENTICATION GATEWAY B
108
SHOP A
AUTHENTICATION GATEWAY A
123
AUTHENTICATION GATEWAY C
110
WIRELESS TERMINAL B
109
WIRELESS LAN BASE STATION B
107
WIRELESS TERMINAL A
WIRELESS LAN BASE STATION A
106
121
WIRELESS LAN BASE STATION C
COMMUNICATION RANGE OF BASE STATION C
COMMUNICATION RANGE OF BASE STATION B
COMMUNICATION RANGE OF BASE STATION A